

<110> Deutsches Krebsforschungszentrum Stiftung des öffentlichen
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<120> Konjugat zur Behandlung prokaryontischer Infektionen

<130> K 3125

<140> PCT/DE 03/00124
<141> 2003-01-17

<150> DE 102 01 862.6
<151> 2002-01-18

<160> 31

<170> PatentIn version 3.2

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<213> Künstliche Sequenz

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 <212> PRT
 <213> Bacteriophage P1

<400> 4

Met Leu Asp Thr Gln Glu Leu Ala Pro Val Ala Ile Ala Leu Leu Leu
 1 5 10 15

Ser Val Ile Gly Gly Ile Gly Thr Phe Leu Met Asp Val Arg Asp Gly
 20 25 30

Arg Gln Ser Gly Asn Leu Leu Gly Leu Val Thr Glu Ile Phe Val Ala
 35 40 45

Val Thr Ala Gly Ala Val Ala Tyr Leu Leu Gly Gln His Glu Gly Trp
 50 55 60

Glu Leu Ser Ile Thr Tyr Leu Met Val Thr Ile Ala Ser Asn Asn Gly
 65 70 75 80

His Glu Val Ile Ser Gly Met Lys Arg Val Asn Ile Asp Ser Ile Leu
 85 90 95

Asn Val Leu Thr Ser Leu Val Lys Lys Gly Gly Gly Lys
 100 105

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 <213> Bacteriophage H19B

<400> 5

Met Glu Lys Ile Thr Thr Gly Val Ser Tyr Thr Thr Ser Ala Val Gly
 1 5 10 15

Thr Gly Tyr Trp Leu Leu Gln Leu Leu Asp Lys Val Ser Pro Ser Gln
 20 25 30

Trp Val Ala Ile Gly Val Leu Gly Ser Leu Leu Phe Gly Leu Leu Thr
 35 40 45

Tyr Leu Thr Asn Leu Tyr Phe Lys Ile Arg Glu Asp Arg Arg Lys Ala
 50 55 60

Val Arg Gly Glu
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<213> Bacteriophage A118

<400> 6

Met Ile Glu Met Glu Phe Gly Lys Glu Leu Leu Val Tyr Met Thr Phe
1. 5 10 15

Leu Val Val Val Thr Pro Val Phe Val Gln Ala Ile Lys Lys Thr Glu
20 25 30

Leu Val Pro Ser Lys Trp Leu Pro Thr Val Ser Ile Leu Ile Gly Ala
35 40 45

Ile Leu Gly Ala Leu Ala Thr Phe Leu Asp Gly Ser Gly Ser Leu Ala
50 55 60

Thr Met Ile Trp Ala Gly Ala Leu Ala Gly Ala Gly Gly Thr Gly Leu
65 70 75 80

Phe Glu Gln Phe Thr Asn Arg Ser Lys Lys Tyr Gly Glu Asp Asp Lys
85 90 95

<210> 7
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<213> Lactobacillus casei bacteriophage A2

<400> 7

Met Lys Ile Asn Trp Lys Val Ala Val Leu Ser Val Lys Phe Trp Leu
1 5 10 15

Ala Leu Val Pro Ala Ala Leu Leu Val Val Gln Thr Ala Ala Ala Val
20 25 30

Phe Gly Tyr Asn Trp Asp Phe Ala Asn Leu Gly Lys Glu Leu Thr Ala
35 40 45

Val Ile Asn Ala Val Phe Ala Leu Leu Thr Ile Val Gly Val Ala Val
50 55 60

Asp Pro Thr Thr Glu Gly Val Ser Asp Ser Gln Gln Ala Leu Ala Tyr
65 70 75 80

Pro Ala Leu Ile Thr Thr Lys Ala Ala Lys Ile Lys Ser Leu Glu Asp
85 90 95

Gln Ile Lys Ala Leu Gln Ala Asp Lys Ala Ala Asp Gln Ala Thr Ser
100 105 110

Ala Ala Ser Glu Val Val Pro Glu Thr Ser Ser Ala Ala Pro Ala Glu
 115 120 125

Ser Ala Pro Glu Ser Val Ala Pro Val Ala Ser Glu Glu Val Lys
 130 135 140

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 <213> Lactobacillus bacteriophage phig 1e

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Met Asp Ile Ile Thr Ser Leu Asn Leu Ala Thr Ala Gly Glu Leu Ala
 1 5 10 15

Leu Ile Ser Phe Phe Ile Gly Val Ile Val Gln Ala Ile Lys Lys Thr
 20 25 30

Gly Lys Val Lys Asn Thr Tyr Leu Pro Phe Ile Ser Met Gly Ile Gly
 35 40 45

Ile Leu Ala Gly Leu Ala Ala Val Val Val Thr Lys Asp Thr Asn Tyr
 50 55 60

Leu Asn Gly Ala Val Ala Gly Leu Ile Val Gly Ala Ala Thr Ser Gly
 65 70 75 80

Leu Thr Asp Gly Leu Ser Val Gly Thr Ser Ala Val Thr Thr Ala Lys
 85 90 95

Ala Thr Lys Asp Ala Ala Lys Thr Ala Ala Ile Thr Gln Ala Val Leu
 100 105 110

Asn Ser Ile Asn Thr Thr Lys Ser Ser Asp Thr Thr Gln Val Ala Asn
 115 120 125

Thr Ser Asn Thr Glu Gly Gly Ser Thr Ser Glu Thr Gln Lys
 130 135 140

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 <213> Lactobacillus delbrueckii subsp. lactis bacteriophage LL-H

<400> 9

Met Thr Leu Ile Asp Trp Phe Asn Leu Ile Val Ala Ile Gly Thr Ile
 1 5 10 15

Ala Leu Ala Val Val Ala Ser Val Tyr Val His Leu Lys Ala Lys Ile
 20 25 30

Asp Thr Lys Thr Ala Ala Gly Lys Ala Phe Asp Leu Val Gly Lys Leu
 35 40 45

Ala Val Trp Ala Val Asn Glu Ala Glu His Ser Gln Asp Gly Gly Ala
 50 55 60

Ala Lys Arg Glu Phe Ala Ala Lys Leu Ile Ser Asp Gln Leu Lys Ala
 65 70 75 80

Lys Gly Ile Thr Gly Ile Asp Glu Lys Met Val Tyr Gly Ala Val Glu
 85 90 95

Thr Ala Trp Lys Glu Ala Ile Glu Asn Val Lys
 100 105

<210> 10

<211> 44

<212> PRT

<213> Lactococcus phage c2

<400> 10

Met Ile Glu Thr Leu Arg Ala Ile Gly Leu Val Val Phe Met Gln Leu
 1 5 10 15

Leu Ser Leu Ala Leu Glu Phe Ile Asp Thr Gly Thr Leu Lys Pro Ser
 20 25 30

Val Arg Lys Arg Ile Ala Val Glu Leu Met Val Leu
 35 40

<210> 11

<211> 74

<212> PRT

<213> bacteriophage phi AM2

<400> 11

Met Phe Phe Asn Asn Lys Phe Tyr Asn Val Ile Lys Trp Ala Val Leu
 1 5 10 15

Thr Ala Leu Pro Ala Leu Ser Val Phe Ile Gly Val Ile Gly Lys Ala
 20 25 30

Tyr Gly Trp Gly Gly Thr Asp Leu Ala Ile Ile Thr Leu Asn Ala Phe
 35 40 45

Thr Val Phe Leu Gly Thr Leu Ala Gly Val Ser Ala Val Lys Tyr Asn
 50 55 60

Ser Gln Pro Asn Asp Thr Lys Glu Asn Lys
 65 70

<210> 12

<211> 88

<212> PRT
 <213> Bacteriophage Tuc2009

<400> 12

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Met Asn Gln Ile Asn Trp Lys Leu Arg Leu Lys Ser Lys Ala Phe Trp
 1           5           10          15
Leu Ala Leu Leu Pro Ala Leu Phe Leu Leu Ile Gln Ala Ile Gly Ala
          20           25          30
Pro Phe Gly Tyr Lys Trp Asp Phe Val Ile Leu Asn Gln Gln Leu Ala
          35           40          45
Ala Val Val Asn Ala Ala Phe Ala Leu Leu Ala Ile Val Gly Val Val
          50           55          60
Ala Asp Pro Thr Thr Ser Gly Leu Gly Asp Ser Asp Arg Val Leu Asn
65           70          75          80
Lys Asp Lys Ser Glu Glu Asn Lys
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<210> 13
 <211> 88
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 <213> Bacteriophage TPW22

<400> 13

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 1           5           10          15
Leu Ala Leu Leu Pro Ala Leu Phe Leu Leu Ile Gln Ala Ile Gly Ala
          20           25          30
Ser Phe Gly Tyr Lys Trp Asn Phe Val Ile Leu Asn Gln Gln Leu Ala
          35           40          45
Ala Val Val Asn Ala Ala Phe Ala Leu Leu Ala Ile Val Gly Val Val
          50           55          60
Ala Asp Pro Thr Thr Ser Gly Leu Gly Asp Ser Asp Arg Val Leu Asn
65           70          75          80
Lys Asp Lys Ser Glu Glu Asn Lys
          85
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<210> 14
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 <213> homology to Orf78 of phage HP1 and gene S of phage P21

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Gly Ser Ala Ile Ala Ile Tyr Ser Gly Phe Thr Leu Ala Asp Trp Ala
20 25 30

Ala Ile Phe Gly Ile Leu Phe Gly Leu Phe Thr Met Leu Ile Asn Trp
35 40 45

Tyr Tyr Lys Asn Lys Glu Ile Lys Leu Lys Glu Thr Ala Leu Lys Gln
50 55 60

Lys Ile Asp Leu Lys Glu Gly Asp His Glu
65 70

<210> 15
<211> 133
<212> PRT
<213> Bacillus phage GA-1

<400> 15

Met Phe Glu Phe Phe His Ser Leu Met Glu Thr Asp Asp Thr Lys Val
1 5 10 15

Tyr Phe Leu Leu Gly Ile Ile Gly Val Leu Asn Ile Val Asp Phe Phe
20 25 30

Phe Gly Phe Ile Asn Ala Lys Phe Asn Lys Ser Ile Ala Tyr Lys Ser
35 40 45

Ser Lys Thr Ile Asp Gly Ile Met Arg Lys Met Lys Phe Thr Ile Met
50 55 60

Ala Ile Leu Phe Ile Pro Val Ser Val Leu Met Pro Glu Pro Ile Gly
65 70 75 80

Leu Gly Ala Leu Tyr Val Phe Tyr Phe Gly Tyr Ile Tyr Ala Glu Leu
85 90 95

Asn Ser Ile Leu Ser His Leu Lys Leu Ser Glu Asp Gly Lys Glu Thr
100 105 110

Glu Val Phe Leu Asp Phe Ile Asn Thr Phe Phe Asn Ser Thr Lys Gly
115 120 125

Asp Lys Lys Asp Asp
130

<210> 16
<211> 57
<212> PRT
<213> Staphylococcus phage 187

<400> 16

K3125.txt

Met Leu Met Val Ile Met Val Gly Asn Val Gly Ile Tyr Leu Thr Ile
1 5 10 15

Phe Leu Ile Asp Thr Gly Thr Leu Arg His Gln Ala Thr Gln Glu Ile
20 25 30

Trp His Gly Ile Asp Ile Leu Lys Gly Leu Lys Cys Leu Glu Thr Leu
35 40 45

Leu Ile Leu Ser Leu Asn Gln Val Ile
50 55

<210> 17
<211> 71
<212> PRT
<213> Shigella dysenteriae

<400> 17

Met Tyr Gln Met Glu Lys Ile Thr Thr Gly Val Ser Tyr Thr Thr Ser
1 5 10 15

Ala Val Gly Met Gly Tyr Trp Phe Leu Gln Phe Leu Asp Arg Val Ser
20 25 30

Pro Ser Gln Trp Ala Ala Ile Gly Val Leu Gly Ser Leu Leu Phe Gly
35 40 45

Leu Leu Thr Tyr Leu Thr Asn Leu Tyr Phe Lys Ile Arg Glu Asp Arg
50 55 60

Arg Lys Ala Ala Arg Gly Glu
65 70

<210> 18
<211> 75
<212> PRT
<213> Künstliche Sequenz

<220>
<223> Holin

<400> 18

Met Glu Arg Trp Thr Leu Leu Asp Ile Leu Ala Phe Leu Leu Leu Leu
1 5 10 15

Ser Leu Leu Leu Pro Ser Leu Leu Ile Met Phe Ile Pro Ser Met Tyr
20 25 30

Lys Gln His Ala Ser Leu Trp Lys Ala Arg Ser Leu Ala Lys Thr Leu
35 40 45

Ser Met Ala Ser Ser Ala Arg Leu Thr Pro Leu Ser Ser Ser Arg Thr
50 55 60

Pro Cys Val Leu Lys Gln Asp Ser Lys Lys Leu
65 70 75

<210> 19
<211> 87
<212> PRT
<213> B.subtilis

<400> 19

Met Asn Thr Phe Asp Lys Gly Thr Val Ile Arg Thr Val Leu Leu Leu
1 5 10 15

Ile Ala Leu Ile Asn Gln Thr Met Leu Met Leu Gly Lys Ser Pro Leu
20 25 30

Asp Ile Gln Glu Glu Gln Val Asn Gln Leu Ala Asp Ala Leu Tyr Ser
35 40 45

Ala Gly Ser Ile Ala Phe Thr Ile Gly Thr Thr Leu Ala Ala Trp Phe
50 55 60

Lys Asn Asn Tyr Val Thr Glu Lys Gly Lys Lys Gln Arg Asp Leu Leu
65 70 75 80

Arg Asp Asn Asn Leu Thr Lys
85

<210> 20
<211> 70
<212> PRT
<213> Bacillus subtilis 168 prophage

<400> 20

Met Glu Met Asp Ile Thr Gln Tyr Leu Ser Thr Gln Gly Pro Phe Ala
1 5 10 15

Val Leu Phe Cys Trp Leu Leu Phe Tyr Val Met Lys Thr Ser Lys Glu
20 25 30

Arg Glu Ser Lys Leu Tyr Asn Gln Ile Asp Ser Gln Asn Glu Val Leu
35 40 45

Gly Lys Phe Ser Glu Lys Tyr Asp Val Val Ile Glu Lys Leu Asp Lys
50 55 60

Ile Glu Gln Asn Phe Lys
65 70

<210> 21
<211> 88
<212> PRT
<213> Bacillus subtilis 168 prophage

<400> 21

Met Phe Glu Asn Ile Asp Lys Gly Thr Ile Val Arg Thr Leu Leu Leu
 1 5 10 15

Ala Ile Ala Leu Leu Asn Gln Ile Met Val Met Leu Gly Lys Ala Ala
 20 25 30

Phe Ile Ile Asn Glu Glu Asp Ile Asn His Leu Tyr Asp Cys Leu Tyr
 35 40 45

Thr Ile Phe Thr Ile Val Phe Thr Thr Ser Thr Thr Thr Ala Ala Trp
 50 55 60

Phe Lys Asn Asn Tyr Ile Thr Ala Lys Gly Lys Lys Gln Lys Gln Val
 65 70 75 80

Leu Lys Lys Glu Asn Leu Phe Lys
 85

<210> 22

<211> 119

<212> PRT

<213> Bacteriophage phi-Ea1h

<400> 22

Met Arg Lys Ile Tyr Val Val Ile Ile Thr Thr Ile Val Val Ala Gly
 1 5 10 15

Leu Ile Trp Ala Phe Ile Ala Thr Gln Val Asn Thr Gly Val Thr Ser
 20 25 30

Lys Arg Gln Glu Asp Ala Leu Ala Val Ser Glu Ala Asn Val Gly Ile
 35 40 45

Gly Lys Glu Ala Lys Asp Gln Gly Glu Gln Ala Thr Lys Arg Ala Asp
 50 55 60

Val Ala Lys Glu Gln Arg Thr His Gln Ile Asn Gln Leu Lys Asp Lys
 65 70 75 80

Leu His Glu Lys Ala Glu Ser Tyr Asp Ser Ile Pro Leu Ser Pro Ser
 85 90 95

Asp Val Asp Ile Leu Cys Arg Ala Tyr Arg Ser Thr Asp Pro Val Cys
 100 105 110

Ser Pro Thr Val Lys Ser Asp
 115

<210> 23

<211> 91

<212> PRT
 <213> Phage phix174

<400> 23

Met Val Arg Trp Thr Leu Trp Asp Thr Leu Ala Phe Leu Leu Leu Leu
 1 5 10 15

Ser Leu Leu Leu Pro Ser Leu Leu Ile Met Phe Ile Pro Ser Thr Phe
 20 25 30

Lys Arg Pro Val Ser Ser Trp Lys Ala Leu Asn Leu Arg Lys Thr Leu
 35 40 45

Leu Met Ala Ser Ser Val Arg Leu Lys Pro Leu Asn Cys Ser Arg Leu
 50 55 60

Pro Cys Val Tyr Ala Gln Glu Thr Leu Thr Phe Leu Leu Thr Gln Lys
 65 70 75 80

Lys Thr Cys Val Lys Asn Tyr Val Gln Lys Glu
 85 90

<210> 24

<211> 109

<212> PRT

<213> Künstliche Sequenz

<220>

<223> Holin

<400> 24

Met Pro Cys Leu Ile His Leu Val Gly Trp Gly Ser Ser Pro Gly Ser
 1 5 10 15

Ala Leu Ile Arg Glu Gln Ala Ile Gly Ala Gly Leu Ala Ala Trp Met
 20 25 30

Thr Cys Leu Arg Gly Arg Tyr Leu Gly Arg Gly Trp Arg Lys Thr Thr
 35 40 45

Phe Asp Ala Ala Ile Cys Ala Leu Ile Ala Trp Phe Ala Arg Asp Gly
 50 55 60

Leu Ala Leu Val Gly Ile Asp Asn Gln Phe Ser Tyr Leu Ser Ser Ile
 65 70 75 80

Ile Val Gly Tyr Leu Gly Asn Asp Tyr Leu Gly Ala Leu Leu Arg Arg
 85 90 95

Arg Leu Glu Lys Lys Ser Gly Glu Ser Asn Ala Pro Gln
 100 105

<210> 25

<211> 95
 <212> PRT
 <213> Listeria innocua

<400> 25

Met Met Lys Met Glu Phe Gly Lys Glu Leu Leu Val Tyr Met Thr Phe
 1 5 10 15

Leu Val Val Val Thr Pro Val Phe Val Gln Ala Ile Lys Lys Thr Glu
 20 25 30

Leu Ile Pro Ser Lys Trp Leu Pro Thr Val Ser Ile Leu Val Gly Ala
 35 40 45

Ile Leu Gly Ala Leu Ala Thr Ser Leu Asp Gly Ser Gly Ser Leu Ala
 50 55 60

Thr Met Ile Trp Ala Gly Ala Leu Ala Gly Ala Gly Gly Thr Gly Leu
 65 70 75 80

Phe Glu Gln Phe Thr Asn Arg Ala Lys Lys Tyr Gly Lys Asp Asp
 85 90 95

<210> 26
 <211> 145
 <212> PRT
 <213> bacteriophage 80 alpha

<400> 26

Met Asp Ile Asn Trp Lys Leu Arg Phe Lys Asn Lys Ala Val Leu Thr
 1 5 10 15

Gly Leu Val Gly Ala Leu Phe Val Phe Ile Lys Gln Val Thr Asp Leu
 20 25 30

Phe Gly Leu Asp Leu Ser Thr Gln Leu Asn Gln Ala Ser Ala Ile Ile
 35 40 45

Gly Ala Ile Leu Thr Leu Leu Thr Gly Ile Gly Val Ile Thr Asp Pro
 50 55 60

Thr Ser Lys Gly Val Ser Asp Ser Ser Ile Ala Gln Thr Tyr Gln Ala
 65 70 75 80

Pro Arg Asp Ser Lys Lys Glu Glu Gln Gln Val Thr Trp Lys Ser Ser
 85 90 95

Gln Asp Ser Ser Leu Thr Pro Glu Leu Ser Ala Lys Ala Pro Lys Glu
 100 105 110

Tyr Asp Thr Ser Gln Pro Phe Thr Asp Ala Ser Asn Asp Val Gly Phe
 115 120 125

k3125.txt

Asp Val Asn Glu Tyr His His Gly Gly Gly Asp Asn Ala Ser Lys Ile
130 135 140

Asn
145

<210> 27
<211> 145
<212> PRT
<213> Staphylococcus bacteriophage phi 11

<400> 27

Met Asp Ile Asn Trp Lys Leu Arg Phe Lys Asn Lys Ala Val Leu Thr
1 5 10 15

Gly Leu Val Gly Ala Leu Phe Val Phe Ile Lys Gln Val Thr Asp Leu
20 25 30

Phe Gly Leu Asp Leu Ser Thr Gln Leu Asn Gln Ala Ser Ala Ile Ile
35 40 45

Gly Ala Ile Leu Thr Leu Leu Thr Gly Ile Gly Val Ile Thr Asp Pro
50 55 60

Thr Ser Lys Gly Val Ser Asp Ser Ser Ile Ala Gln Thr Tyr Gln Ala
65 70 75 80

Pro Arg Asp Ser Lys Lys Glu Glu Gln Gln Val Thr Trp Lys Ser Ser
85 90 95

Gln Asp Ser Ser Leu Thr Pro Glu Leu Ser Ala Lys Ala Pro Lys Glu
100 105 110

Tyr Asp Thr Ser Gln Pro Phe Thr Asp Ala Ser Asn Asp Val Gly Phe
115 120 125

Asp Val Asn Glu Tyr His His Gly Gly Gly Asp Asn Ala Ser Lys Ile
130 135 140

Asn
145

<210> 28
<211> 138
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<213> Streptococcus pneumoniae bacteriophage MM1

<400> 28

Met Lys Ile Glu Phe Phe Asn Phe Leu Arg Ser Val Ile Gln Thr Glu
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Asp Gly Leu Val Leu Tyr Ala Leu Ala Leu Ile Val Ser Met Glu Ile
seite 13

20

25

30

Ile Asp Phe Val Thr Gly Thr Ile Ala Ala Ile Ile Asn Pro Asp Ile
 35 40 45

Glu Tyr Lys Ser Lys Ile Gly Ile Asn Gly Leu Leu Arg Lys Ile Ser
 50 55 60

Gly Val Leu Leu Leu Met Ile Leu Ile Pro Ala Ser Val Leu Leu Pro
 65 70 75 80

Glu Lys Thr Gly Phe Ala Phe Leu Tyr Ser Ile Cys Leu Gly Tyr Ile
 85 90 95

Ala Phe Thr Phe Gln Ser Leu Ile Glu Asn Tyr Arg Lys Leu Lys Gly
 100 105 110

Asn Val Thr Leu Phe Gln Pro Ile Val Lys Val Phe Gln Arg Leu Leu
 115 120 125

Glu Lys Asp Asp Asp Thr Lys Lys Gly Glu
 130 135

<210> 29
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 <213> Streptococcus thermophilus bacteriophage Sfi21
 <400> 29

Met Lys Lys Arg Lys Lys Lys Met Ile Asn Phe Lys Leu Arg Leu Gln
 1 5 10 15

Asn Lys Ala Thr Leu Val Ala Leu Ile Ser Ala Val Phe Leu Met Leu
 20 25 30

Gln Gln Phe Gly Leu His Val Pro Asn Asn Ile Gln Gly Ile Asn Thr
 35 40 45

Leu Val Gly Ile Leu Val Ile Leu Gly Ile Ile Thr Asp Pro Thr Thr
 50 55 60

Lys Gly Ile Ala Asp Ser Glu Arg Ala Leu Ser Tyr Ile Gln Pro Leu
 65 70 75 80

Asp Asp Lys Glu Val Tyr
 85

<210> 30
 <211> 96
 <212> PRT
 <213> Bacteriophage A500
 <400> 30

Met Met Lys Met Glu Phe Gly Lys Glu Leu Leu Val Tyr Met Thr Phe
1 5 10 15

Leu Val Val Val Thr Pro Val Phe Val Gln Ala Ile Lys Lys Thr Glu
20 25 30

Leu Ile Pro Ser Lys Trp Leu Pro Thr Val Ser Ile Leu Val Gly Ala
35 40 45

Ile Leu Gly Ala Leu Ala Thr Ser Leu Asp Gly Ser Gly Ser Leu Ala
50 55 60

Thr Met Ile Trp Ala Gly Ala Leu Ala Gly Ala Gly Gly Thr Gly Leu
65 70 75 80

Phe Glu Gln Phe Thr Asn Arg Ala Lys Lys Tyr Gly Lys Asp Asp Lys
85 90 95

<210> 31
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<212> PRT
<213> Bacteriophage PL-1

<400> 31

Met Gln Asn Glu Leu Leu Gln Val Leu Ala Ile Ala Phe Val Ile Ala
1 5 10 15

Pro Ile Thr Thr Gly Phe Thr Glu Ile Phe Lys Arg Tyr Thr Pro Ala
20 25 30

Glu Gly Lys Leu Leu Pro Val Leu Ser Ile Gly Thr Gly Ile Leu Leu
35 40 45

Ala Cys Val Trp Ala Met Ala Phe Gly His Leu Pro Leu Ile Gly Ala
50 55 60

Tyr Ala Leu Ala Gly Met Leu Ser Gly Leu Ala Ser Val Gly Val Tyr
65 70 75 80

Gln Ile Val Lys Pro Asn Glu Glu Val Lys
85 90